Pennsylvania Department of Environmental Protection

Northwest Regional Office
CLEAN WATER PROGRAM

Application Type	**Renewal**	Application No.	**PA0036994**
Facility Type	**Municipal**	APS ID	**1048726**
Major / Minor	**Minor**	Authorization ID	**1371184**

NPDES PERMIT FACT SHEET INDIVIDUAL SEWAGE

Applicant and Facility Information

Applicant Name	**Pleasantville Borough**	Facility Name	**Pleasantville Borough STP**
Applicant Address	114 West State Street	Facility Address	South Main Street
	Pleasantville, PA 16341		Pleasantville, PA 16341
Applicant Contact	Harvey Long	Facility Contact	Mike Guzzi
Applicant Phone	(814) 589-7432	Facility Phone	(814) 589-5321
Client ID	23973	Site ID	261190
Ch 94 Load Status	Not Overloaded	Municipality	Pleasantville Borough
Connection Status	No Limitations	County	Venango
Date Application Received	October 1, 2021	EPA Waived?	Yes
Date Application Accepted	October 1, 2021	If No, Reason	-

Purpose of Application: Renewal of NPDES permit.

Summary of Review

The applicant is requesting the renewal of an NPDES permit to discharge up to 0.4 MGD of treated sewage into Tributary 54760 of West Pithole Creek, a Cold-Water Fish (CWF) receiving stream in State Water Plan Basin 16-E (Oil Creek). As per the Department's current existing use list, the receiving stream does not have an existing use classification that is more protective than its designated use. This discharge is not expected to affect public water supplies.

Apart from Ammonia-Nitrogen, all limitations and monitoring requirements from the previously issued permit (effective April 1, 2017) are carried over in this renewal and summarized at the end of the fact sheet. WQM 7.0 (see WQM Modeling section) recommended a slightly more stringent summertime monthly average limitation of 1.6 mg/L for Ammonia-N (previously 2.0 mg/L). It appears the permittee can meet the new limitations after review of eDMR data, therefore, the limitations will come into effect on the permit effective date. The standard 3x wintertime multiplier and 2x IMAX multiplier is applied for Ammonia-Nitrogen.

Limits for $CBOD_5$, TSS, and D.O. were previously derived from an older version of the Department's "Dry Streams and Swales Manual" due to the effluent dominated nature of the receiving stream. Cap loads for Total Nitrogen and Total Phosphorus were included in the NPDES permit when the WWTP was upgraded to a hydraulic design capacity of 0.4 MGD and are carried over in this renewal.

The permit renewal application indicates the facility utilizes ultraviolet (UV) radiation for disinfection with chlorine as a backup. eDMR data shows chlorine is regularly used at the WWTP, therefore, the previously established daily monitoring requirements are carried over in this renewal. The following Part C template special condition is added to the permit for UV system monitoring and replaces the UV Part C condition from the previously issued permit:

The permittee shall report operation of the ultraviolet (UV) disinfection system on a daily basis using the Daily Effluent Monitoring Form (3800-FM-BCW0435) and the parameter named "UV Functional" The permittee shall report values of "1" for

Approve	Deny	Signatures	Date
X		Brian Burden, E.I.T. / Project Manager	December 9, 2024
X		Adam Olesnanik Adam Olesnanik, P.E. / Environmental Engineer Manager	December 12, 2024

Summary of Review

Yes (i.e., the UV system is functional) and "< 1" for No (i.e., the UV system is not functional). The UV system shall be considered functional when all components that are necessary for disinfection to achieve effluent limitations in Part A of this permit are operating properly.

DEP's Toxics Management Spreadsheet was not utilized during this renewal since no sample results for toxic pollutants are available in the renewal application or eDMR. There are no commercial or industrial users in the sewage collection system. Sample results were provided with the renewal application for the public water supply sensitive pollutants (TDS, Bromide, Chloride and Sulfate). Since the nearest downstream public water supply intake is approximately 64 miles downstream on the Allegheny River, there was no need to model the discharge with the water supply intake as the second modeling point due to the large dilatation available.

Monitoring frequencies for all parameters with limitations are consistent with the recommended frequencies found in Table 6-3 of DEP's Technical Guidance for the Development and Specification of Effluent Limitations (Document No. 362-0400-001).

The most recently submitted Chapter 94 report for 2023 doesn't show any current or projected hydraulic/organic overloads at the WWTP.

As per current DEP guidance, quarterly monitoring/reporting requirements are included in the renewed permit for E. Coli. Template Part C special conditions are carried over in this renewal.

Sludge use and disposal description and location(s): Sludge from the facility is hauled to the Seneca Landfill via Tri County Industries.

Public Participation

DEP will publish notice of the receipt of the NPDES permit application and a tentative decision to issue the individual NPDES permit in the *Pennsylvania Bulletin* in accordance with 25 Pa. Code § 92a.82. Upon publication in the *Pennsylvania Bulletin*, DEP will accept written comments from interested persons for a 30-day period (which may be extended for one additional 15-day period at DEP's discretion), which will be considered in making a final decision on the application. Any person may request or petition for a public hearing with respect to the application. A public hearing may be held if DEP determines that there is significant public interest in holding a hearing. If a hearing is held, notice of the hearing will be published in the *Pennsylvania Bulletin* at least 30 days prior to the hearing and in at least one newspaper of general circulation within the geographical area of the discharge.

Discharge, Receiving Waters and Water Supply Information

Outfall No.	001	Design Flow (MGD)	0.4
Latitude	41º 35' 19"	Longitude	-79º 35' 3"
Quad Name	Pleasantville	Quad Code	0609
Wastewater Description:	Sewage Effluent		
Receiving Waters	Tributary 54760 to West Pithole Creek (CWF)	Stream Code	54760
NHD Com ID	100473587	RMI	1.14
Drainage Area	0.65 mi^2	Yield (cfs/mi^2)	0.1
Q_{7-10} Flow (cfs)	0.065	Q_{7-10} Basis	Gage 03020500
Elevation (ft)	1579	Slope (ft/ft)	0.0086
Watershed No.	16-E	Chapter 93 Class.	CWF
Existing Use	-	Existing Use Qualifier	-
Exceptions to Use	-	Exceptions to Criteria	-
Assessment Status	Impaired		
Cause(s) of Impairment	Nutrients		
Source(s) of Impairment	Municipal Point Source Discharges		
TMDL Status	N/A	Name	N/A

Background/Ambient Data		Data Source
pH (SU)	-	-
Temperature (°F)	-	-
Hardness (mg/L)	-	-
Other:	-	-

Nearest Downstream Public Water Supply Intake	Aqua Pennsylvania Emlenton		
PWS Waters	Allegheny River	Flow at Intake	542 cfs - StreamStats (6390 mi^2 D.A.)
PWS RMI	90.5	Distance from Outfall	~64 miles

Treatment Facility Summary

Treatment Facility Name: Pleasantville Borough - STP

WQM Permit No.	Issuance Date
6188404 A-2	April 8, 2014

Waste Type	Degree of Treatment	Process Type	Disinfection	Avg Annual Flow (MGD)
Sewage	Secondary	Sequencing Batch Reactor	Ultraviolet - Chlorination/Dechlorination Backup	0.4

Hydraulic Capacity (MGD)	Organic Capacity (lbs/day)	Load Status	Biosolids Treatment	Biosolids Use/Disposal
0.4	600	Not Overloaded	Aerobic Digestion	Landfill

Development of Effluent Limitations

Outfall No. 001 **Design Flow (MGD)** 0.4
Latitude 41º 35' 19" **Longitude** -79º 35' 3"
Wastewater Description: Sewage Effluent

Technology-Based & BPJ Limitations

The following technology-based limitations apply, subject to water quality analysis and BPJ where applicable:

Pollutant	Limit (mg/l)	SBC	Federal Regulation	State Regulation
$CBOD_5$	10.0	Average Monthly	-	BPJ
	15.0	Average Weekly		
	20.0	IMAX		
Total Suspended Solids	10.0	Average Monthly	-	BPJ
	15.0	Average Weekly		
	20.0	IMAX		
Dissolved Oxygen	6.0	Minimum	-	BPJ
pH	6.0 – 9.0 S.U.	Min – Max	133.102(c)	95.2(1)
Fecal Coliform (5/1 – 9/30)	200 / 100 ml	Geo Mean	-	92a.47(a)(4)
	1,000 / 100 ml	IMAX	-	92a.47(a)(4)
Fecal Coliform (10/1 – 4/30)	2,000 / 100 ml	Geo Mean	-	92a.47(a)(5)
	10,000 / 100 ml	IMAX	-	92a.47(a)(5)

Comment: Mass-based limitations are included in the permit for $CBOD_5$ and TSS.

Water Quality-Based Limitations

The following concentration limitations (except TN & TP) were determined through water quality modeling:

Parameter	Limit (mg/l)	SBC	Model
Total Residual Chlorine	0.024	Average Monthly	2017 TRC Calculation Spreadsheet
	0.08	IMAX	
Ammonia-Nitrogen (5/1 – 10/31)	1.6	Average Monthly	2024 WQM 7.0
	3.2	IMAX	
Ammonia-Nitrogen (11/1 – 4/30)	4.8	Average Monthly	
	9.6	IMAX	
Total Nitrogen	12.0 lbs/day	Average Monthly	Cap Loads established for 0.4 MGD WWTP upgrade
Total Phosphorus	1.5 lbs/day	Average Monthly	

Comment: Mass-based limitations are included in the permit for Ammonia-Nitrogen.

Monitoring Requirements

The following monitoring requirements have been established:

Parameter	SBC	Model / Basis
Flow (MGD)	Average Monthly	Standard requirement
	Daily Maximum	
Influent BOD_5	Average Monthly	Standard requirement for POTWs
Influent TSS	Average Monthly	
E. Coli	IMAX	2024 DEP Guidance / § 92a.61

Comments: Mass-based monitoring requirements are included in the permit for influent BOD_5 and influent TSS.

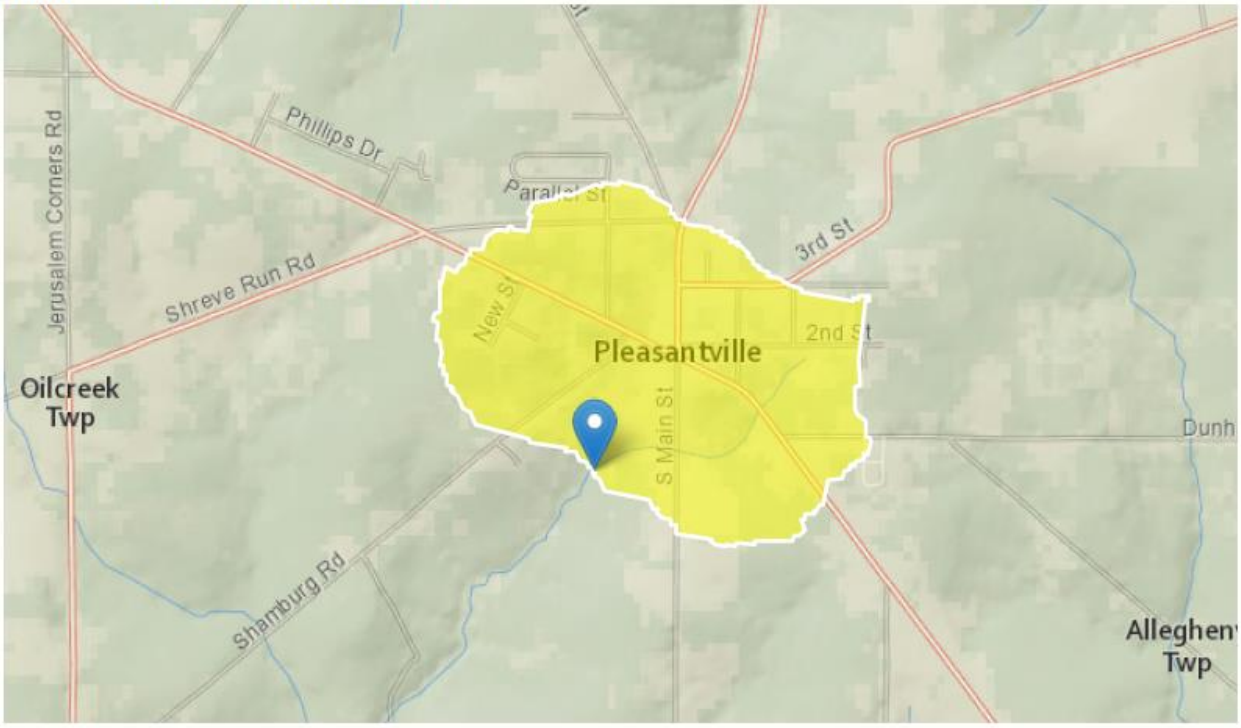
Anti-Backsliding

No limitations were removed from the permit or made less stringent.

Watershed Information

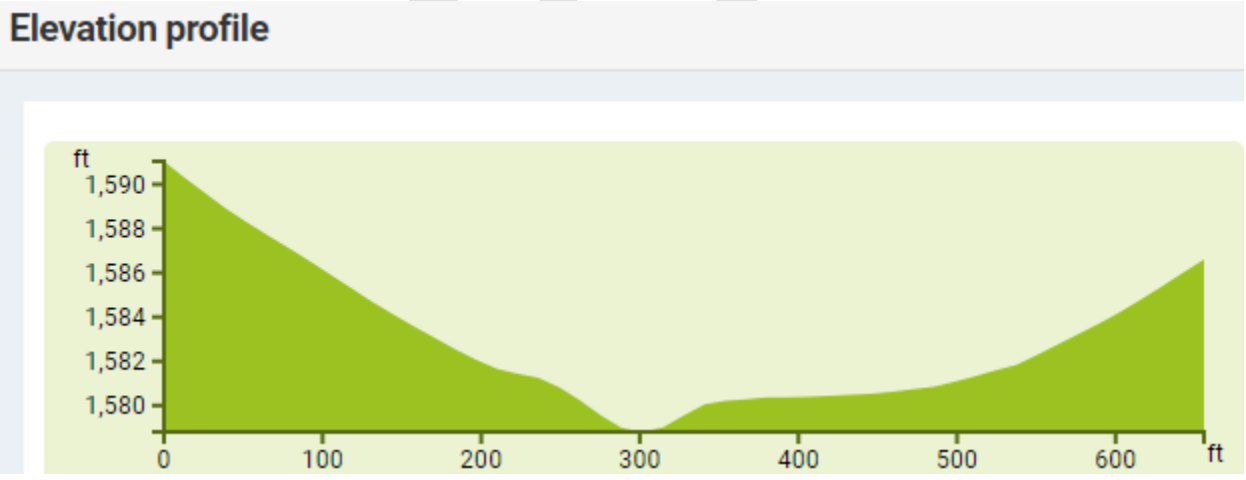
@ Outfall 001 on Tributary 54760 to West Pithole Creek
RMI = 1.14

Clicked Point (Latitude, Longitude): 41.58792, -79.58470
Time: 2024-11-25 08:38:53 -0500



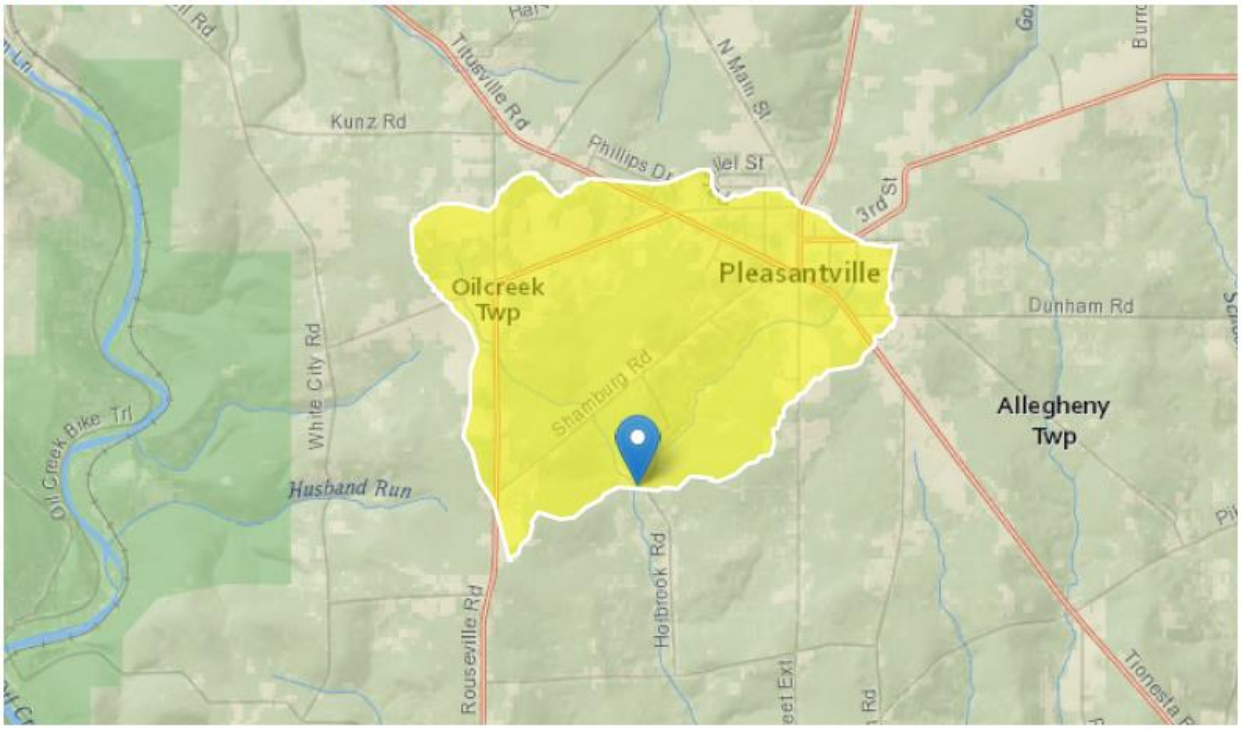
DRNAREA	Area that drains to a point on a stream	0.65	square miles

Elevation: 1579 ft



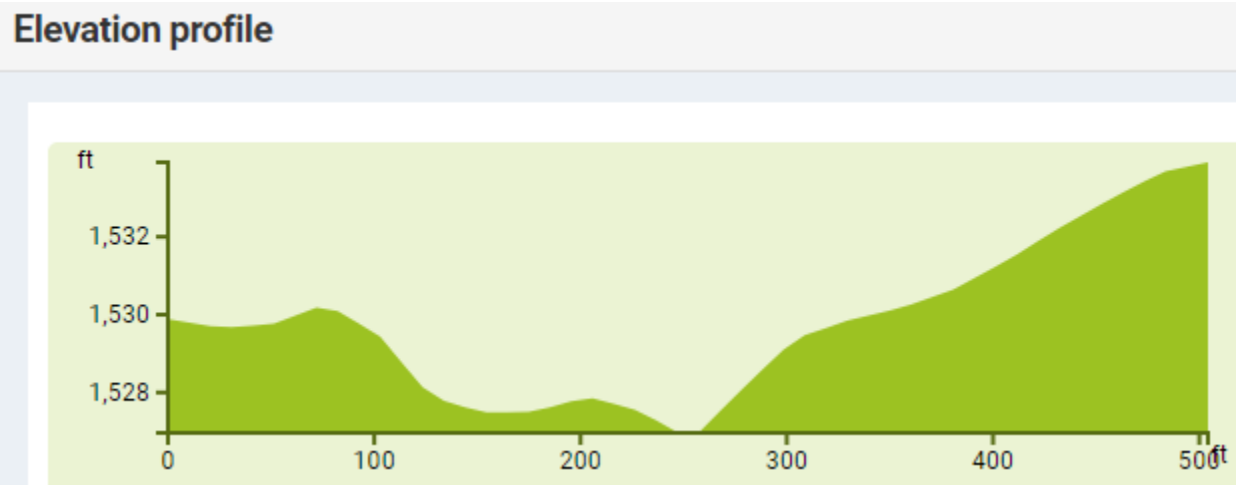
@ confluence with West Pithole Creek
RMI = 0

Clicked Point (Latitude, Longitude): 41.57690, -79.59640
Time: 2024-11-25 09:15:57 -0500



DRNAREA	Area that drains to a point on a stream	2.87	square miles

Elevation: 1527 ft



Reference Stream Gage

USGS Station Number	03020500
Station Name	Oil Creek at Rouseville, Pa.
Station Type	Gaging Station, continuous record
Latitude	41.48173
Longitude	-79.69533
NWIS Latitude	41.4817261
NWIS Longitude	-79.6953304
Is regulated?	false
Agency	United States Geological Survey
NWIS Discharge Period of Record	10/01/1932 - 11/24/2024

Drainage Area	300	square miles
7 Day 10 Year Low F low	30.1	cubic feet per second

Low Flow Yield = 30.1 cfs / 300 mi^2 = 0.1 cfs/mi^2
$Q_{7\text{-}10}$ at Outfall 001 = 0.65 mi^2 x 0.1 cfs/mi^2 = 0.065 cfs

WQM Modeling

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
16E	54760	Trib 54760 to West Pithole Creek	**1.140**	1579.00	0.65	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.100	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
Pleasantville	PA0036994	0.4000	0.4000	0.4000	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	10.00	2.00	0.00	1.50
Dissolved Oxygen	6.00	8.24	0.00	0.00
NH3-N	2.00	0.00	0.00	0.70

Input Data WQM 7.0

SWP Basin	Stream Code	Stream Name	RMI	Elevation (ft)	Drainage Area (sq mi)	Slope (ft/ft)	PWS Withdrawal (mgd)	Apply FC
16E	54760	Trib 54760 to West Pithole Creek	**0.010**	1527.00	2.87	0.00000	0.00	☑

Stream Data

Design Cond.	LFY (cfsm)	Trib Flow (cfs)	Stream Flow (cfs)	Rch Trav Time (days)	Rch Velocity (fps)	WD Ratio	Rch Width (ft)	Rch Depth (ft)	Tributary Temp (°C)	Tributary pH	Stream Temp (°C)	Stream pH
Q7-10	0.100	0.00	0.00	0.000	0.000	0.0	0.00	0.00	20.00	7.00	0.00	0.00
Q1-10		0.00	0.00	0.000	0.000							
Q30-10		0.00	0.00	0.000	0.000							

Discharge Data

Name	Permit Number	Existing Disc Flow (mgd)	Permitted Disc Flow (mgd)	Design Disc Flow (mgd)	Reserve Factor	Disc Temp (°C)	Disc pH
		0.0000	0.0000	0.0000	0.000	25.00	7.00

Parameter Data

Parameter Name	Disc Conc (mg/L)	Trib Conc (mg/L)	Stream Conc (mg/L)	Fate Coef (1/days)
CBOD5	25.00	2.00	0.00	1.50
Dissolved Oxygen	3.00	8.24	0.00	0.00
NH3-N	25.00	0.00	0.00	0.70

WQM 7.0 Hydrodynamic Outputs

SWP Basin	Stream Code	Stream Name
16E	54760	Trib 54760 to West Pithole Creek

RMI	Stream Flow (cfs)	PWS With (cfs)	Net Stream Flow (cfs)	Disc Analysis Flow (cfs)	Reach Slope (ft/ft)	Depth (ft)	Width (ft)	W/D Ratio	Velocity (fps)	Reach Trav Time (days)	Analysis Temp (°C)	Analysis pH
Q7-10 Flow												
1.140	0.06	0.00	0.06	.6188	0.00872	.484	7.22	14.9	0.20	0.353	24.52	7.00
Q1-10 Flow												
1.140	0.04	0.00	0.04	.6188	0.00872	NA	NA	NA	0.19	0.360	24.69	7.00
Q30-10 Flow												
1.140	0.09	0.00	0.09	.6188	0.00872	NA	NA	NA	0.20	0.347	24.38	7.00

WQM 7.0 Modeling Specifications

Parameters	Both	Use Inputted Q1-10 and Q30-10 Flows	☑
WLA Method	EMPR	Use Inputted W/D Ratio	☐
Q1-10/Q7-10 Ratio	0.64	Use Inputted Reach Travel Times	☐
Q30-10/Q7-10 Ratio	1.36	Temperature Adjust Kr	☑
D.O. Saturation	90.00%	Use Balanced Technology	☑
D.O. Goal	5		

WQM 7.0 Wasteload Allocations

SWP Basin	Stream Code	Stream Name
16E	54760	Trib 54760 to West Pithole Creek

NH3-N Acute Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
1.140	Pleasantville	6.92	4	6.92	4	0	0

NH3-N Chronic Allocations

RMI	Discharge Name	Baseline Criterion (mg/L)	Baseline WLA (mg/L)	Multiple Criterion (mg/L)	Multiple WLA (mg/L)	Critical Reach	Percent Reduction
1.140	Pleasantville	1.4	1.6	1.4	1.6	0	0

Dissolved Oxygen Allocations

RMI	Discharge Name	CBOD5		NH3-N		Dissolved Oxygen		Critical Reach	Percent Reduction
		Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)	Baseline (mg/L)	Multiple (mg/L)		
1.14	Pleasantville	10	10	1.6	1.6	6	6	0	0

WQM 7.0 D.O.Simulation

SWP Basin	Stream Code	Stream Name
16E	54760	Trib 54760 to West Pithole Creek

RMI	Total Discharge Flow (mgd)	Analysis Temperature (°C)	Analysis pH
1.140	0.400	24.525	7.000
Reach Width (ft)	**Reach Depth (ft)**	**Reach WDRatio**	**Reach Velocity (fps)**
7.219	0.484	14.902	0.196
Reach CBOD5 (mg/L)	**Reach Kc (1/days)**	**Reach NH3-N (mg/L)**	**Reach Kn (1/days)**
9.24	1.457	1.45	0.992
Reach DO (mg/L)	**Reach Kr (1/days)**	**Kr Equation**	**Reach DO Goal (mg/L)**
6.213	30.933	Owens	5
Reach Travel Time (days)			
0.353			

Subreach Results

TravTime (days)	CBOD5 (mg/L)	NH3-N (mg/L)	D.O. (mg/L)
0.035	8.67	1.40	7.04
0.071	8.14	1.35	7.36
0.106	7.64	1.30	7.50
0.141	7.17	1.26	7.58
0.177	6.73	1.22	7.60
0.212	6.32	1.17	7.60
0.247	5.93	1.13	7.60
0.283	5.57	1.09	7.60
0.318	5.22	1.06	7.60
0.353	4.90	1.02	7.60

WQM 7.0 Effluent Limits

SWP Basin	Stream Code	Stream Name
16E	54760	Trib 54760 to West Pithole Creek

RMI	Name	Permit Number	Disc Flow (mgd)	Parameter	Effl. Limit 30-day Ave. (mg/L)	Effl. Limit Maximum (mg/L)	Effl. Limit Minimum (mg/L)
1.140	Pleasantville	PA0036994	0.400	CBOD5	10		
				NH3-N	1.6	3.2	
				Dissolved Oxygen			6

Monday, November 25, 2024 Version 1.0b

TRC Calculation

TRC EVALUATION

Input appropriate values in A3:A9 and D3:D9

0.065	= Q stream (cfs)	0.5	= CV Daily
0.4	= Q discharge (MGD)	0.5	= CV Hourly
30	= no. samples	1	= AFC_Partial Mix Factor
0.3	= Chlorine Demand of Stream	1	= CFC_Partial Mix Factor
0	= Chlorine Demand of Discharge	15	= AFC_Criteria Compliance Time (min)
0.5	= BAT/BPJ Value	720	= CFC_Criteria Compliance Time (min)
0	= % Factor of Safety (FOS)		=Decay Coefficient (K)

Source	Reference	AFC Calculations	Reference	CFC Calculations
TRC	1.3.2.iii	WLA afc = 0.053	1.3.2.iii	WLA cfc = 0.044
PENTOXSD TRG	5.1a	LTAMULT afc = 0.373	5.1c	LTAMULT cfc = 0.581
PENTOXSD TRG	5.1b	LTA_afc= 0.020	5.1d	LTA_cfc = 0.025

Source		Effluent Limit Calculations	
PENTOXSD TRG	5.1f	AML MULT = 1.231	
PENTOXSD TRG	5.1g	AVG MON LIMIT (mg/l) = 0.024	AFC
		INST MAX LIMIT (mg/l) = 0.079	

WLA afc	(.019/e(-k*AFC_tc)) + [(AFC_Yc*Qs*.019/Qd*e(-k*AFC_tc))... ...+ Xd + (AFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)
LTAMULT afc	EXP((0.5*LN(cvh^2+1))-2.326*LN(cvh^2+1)^0.5)
LTA_afc	wla_afc*LTAMULT_afc
WLA_cfc	(.011/e(-k*CFC_tc) + [(CFC_Yc*Qs*.011/Qd*e(-k*CFC_tc))... ...+ Xd + (CFC_Yc*Qs*Xs/Qd)]*(1-FOS/100)
LTAMULT_cfc	EXP((0.5*LN(cvd^2/no_samples+1))-2.326*LN(cvd^2/no_samples+1)^0.5)
LTA_cfc	wla_cfc*LTAMULT_cfc
AML MULT	EXP(2.326*LN((cvd^2/no_samples+1)^0.5)-0.5*LN(cvd^2/no_samples+1))
AVG MON LIMIT	MIN(BAT_BPJ,MIN(LTA_afc,LTA_cfc)*AML_MULT)
INST MAX LIMIT	1.5*((av_mon_limit/AML_MULT)/LTAMULT_afc)